

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §1251 et seq.; the “CWA”),

Town of Merrimack, New Hampshire

is authorized to discharge from the Town of Merrimack Wastewater Treatment Facility located at

**36 Mast Road
Merrimack, New Hampshire 03452**

to the receiving water named:

Merrimack River (Hydrologic Basin Code: 01070002)

in accordance with the effluent limitations, monitoring requirements, and other conditions set forth herein including, but not limited to, conditions requiring proper operation and maintenance of the Town of Merrimack Wastewater Treatment Facility collection system.

The Town of Bedford is a co-permittee for activities required in Part I.B. (Unauthorized Discharges), Part I.C. (Operation and Maintenance of the Sewer System) and Part I.D. (Alternate Power Source). The responsible municipal department is:

**Town of Bedford
Department of Public Works
24 North Amherst Road
Bedford, New Hampshire 03110**

This permit shall become effective on December 1, 2007.

This permit and the authorization to discharge expire at midnight November 30, 2012.

This permit supersedes the permit issued on June 14, 2001.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, etc., Attachment A (Freshwater Acute Toxicity Test Procedure and Protocol), Attachment B (Reassessment of Technically Based Industrial Discharge Limits), Attachment C (NPDES Permit Requirement for Industrial Pretreatment Annual Report), Sludge Compliance Guidance, and Part II including General Conditions and Definitions.

Signed this 25th day of September, 2007

/S/ SIGNATURE ON FILE

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Region I
Boston, Massachusetts

PART I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated domestic, commercial, and industrial wastewaters from outfall Serial Number 001 into the Merrimack River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Parameter	Effluent Limit			Monitoring Requirement	
	Average Monthly	Average Weekly	Maximum Daily	Frequency	Sample Type
Flow, Merrimack WWTF, MGD	5.0	Report	Report	Continuous	Recorder ¹
Flow, Brewery Waste, MGD	Report	Report	Report	Continuous	Recorder ¹
BOD ₅ , lb/day (mg/l)	1,199 (Report)	Report (Report)	2,581 (Report)	2/Week ²	24-Hour Composite
TSS, lb/day (mg/l)	1,473 (Report)	Report (Report)	3,255 (Report)	2/Week ²	24-Hour Composite
pH Range, standard units ³	6.5 to 9.0 Standard Units (See I.H.5.)			1/Day	Grab
Total Residual Chlorine, mg/l ⁴	0.85	---	1.0	1/Day	Grab
<i>Escherichia coli</i> , colonies/100ml ⁵	126		406	3/Week	Grab
Whole Effluent Toxicity					
LC50, percent effluent ^{6,7,8}	Greater than or equal to 100% Effluent			1/Year	24-Hour Composite
Ammonia Nitrogen as Nitrogen, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Hardness, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Aluminum, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Chromium, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Cadmium, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Copper, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Nickel, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Lead, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite
Total Recoverable Zinc, mg/l ⁹	---	---	Report	1/Year	24-Hour Composite

* SEE PAGES 3 AND 4 FOR EXPLANATION OF FOOTNOTES.

EXPLANATION OF FOOTNOTES APPLICABLE TO PART I.A.1 on Page 2

- 1) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
- 2) The influent concentrations of both BOD₅ and TSS shall be monitored twice per month (2/month) using a 24-hour composite sample, and the results reported as average monthly values.
- 3) State certification requirement
- 4) Total residual chlorine shall be measured using an approved method in 40 C.F.R. Part 136. The method chosen shall have a minimum level of detection (ML) at least as low as the permit limit specified in Part I.A.1 of the permit.
- 5) The average monthly value of *Escherichia coli* shall be determined by calculating the geometric mean and the result reported. *Escherichia coli* shall be tested using an approved method as specified in 40 C.F.R. Part 136, List of Approved Biological Methods for Wastewater and Sewage Sludge. *Escherichia coli* samples must be collected concurrently with a total residual chlorine sample.
- 6) LC50 is the concentration of wastewater (effluent) that causes mortality to 50 percent of the test organisms. The greater than or equal to 100% permit limit is defined as a sample which is composed of a minimum of 100 percent effluent (See Part I.A.1 on Page 2 and Attachment A). Therefore, the greater than or equal to 100% permit limit means that a sample of 100% effluent (no dilution) shall cause no greater than 50 percent mortality to the test organisms.
- 7) The permittee shall conduct 48-hour acute (static) toxicity tests on effluent samples using two species, daphnid (*Ceriodaphnia dubia*) and fathead minnow (*Pimephales promelas*), following the protocol in Attachment A (Freshwater Acute Toxicity Test Procedure and Protocol dated December 1995).

Toxicity test samples shall be collected and the tests completed each year during the third quarter (July 1st through September 30th). Toxicity test results shall be submitted by November 15th of each year.

- 8) The permit shall be modified, or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 C.F.R. § 122.62(a)(2).
- 9) For each whole effluent toxicity test, the permittee shall report on the appropriate discharge monitoring report (DMR) the concentrations of ammonia nitrogen as nitrogen, hardness, and total recoverable aluminum, cadmium, chromium, copper, lead, nickel, and zinc found

in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to at least the minimum quantification levels (MLs) shown in Attachment A on Page A-7, or as amended. Also, the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits or float as foam, debris, scum, or other visible pollutants. It shall be adequately treated to ensure that the surface water remains free from pollutants which may produce odor, color, taste, or turbidity in the receiving waters that is not naturally occurring and would render it unsuitable for its designated uses.
4. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both BOD₅ and TSS. The percent removal shall be calculated based on average monthly influent and effluent concentrations.
5. When the effluent discharged for a period of three consecutive months exceeds 80 percent of the 5.0 mgd design flow, 4.0 mgd, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever the treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.
6. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to both EPA-New England and the New Hampshire Department of Environmental Services – Water Division (NHDES-WD) of the following:
 - (a) Any new introduction of pollutants into the POTW from an indirect discharger in a primary industrial category (see 40 C.F.R. §122 Appendix A as amended) discharging process water;
 - (b) Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
 - (c) For the purposes of this paragraph, adequate notice shall include information on:
 1. the quantity and quality of effluent introduced into the POTW; and

2. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
7. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
8. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water-quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, the permittee being so notified.

B. UNAUTHORIZED DISCHARGES

The permit only authorizes discharges in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported in accordance with Part II, Section D.1.e. of the General Requirements of this permit (twenty-four hour reporting).

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. The permittee and co-permittee are required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

The permittee and co-permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee and co-permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow

The permittee and co-permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations.

4. Collection System Mapping

Within three years of the effective date of the permit, the permittee and co-permittee shall each prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions. Such map(s) shall include, but not be limited to the following:

- a. All sanitary sewer lines and related manholes;
- b. All combined sewer lines and related manholes;
- c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain system (e.g. combined manholes);
- d. All outfalls, including the treatment plant outfall(s), CSOs, combined manholes, and any known or suspected SSOs;
- e. All pump stations and force mains;
- f. The wastewater treatment facility(ies);
- g. All surface waters (labeled);
- h. Other major appurtenances such as inverted siphons and air release valves;
- i. A numbering system which uniquely identifies overflow points, regulators and outfalls;
- j. The scale and a north arrow; and
- k. The pipe diameter, age and type of pipe, the length of pipe between manholes, the direction of flow, and the pipe rim and invert elevations.

5. Collection System O&M Plan

The permittee and co-permittee shall each develop and implement a collection system operation and maintenance plan. The plan shall be submitted to EPA and NHDES **within six months of the effective date of this permit**. The plan shall describe the permittee and co-permittee's programs for preventing I/I related effluent limit violations and all unauthorized discharges of wastewater, including overflows and by-passes.

The plan shall include:

- a. A description of the overall condition of the collection system including a list of recent studies and construction activities;
- b. A preventative maintenance and monitoring program for the collection system;
- c. Recommended staffing to properly operate and maintain the sanitary sewer collection system;
- d. The necessary funding level and the source(s) of funding for implementing the plan;
- e. Identification of known and suspected overflows, including combined manholes. A description of the cause of the identified overflows, and a plan for addressing the overflows consistent with the requirements of this permit;

- f. An ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and
- g. An educational public outreach program for all aspects of I/I control, particularly private inflow.

For each of the above activities that are not completed and implemented as of the submittal date, the plan shall provide a schedule for its completion.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee and co-permittee shall provide an alternate power source with which to sufficiently operate the publicly owned treatment works, as defined at 40 C.F.R. § 122.2, which references the definition at 40 C.F.R. § 403.3(o).

E. INDUSTRIAL PRETREATMENT PROGRAM

1. Limitations for Industrial Users:

- a. Pollutants introduced into POTWs by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial Users(s) and all other users as necessary, which together with appropriate changes in the POTW Treatment Plant's facilities or operation, are essential to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of this permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety, and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

2. Industrial Pretreatment Program

- a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program and the General Pretreatment Regulations, 40 C.F.R. §403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 1. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case less than once per year, and maintain adequate records.
 2. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 3. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
 4. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- b. The permit shall provide the EPA and the NHDES-WD with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 40 C.F.R. §403.12(i). The annual report shall be consistent with the format described in Attachment C (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and shall be submitted no later than September 1st of each year.
- c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 C.F.R. §403.18(c).
- d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 C.F.R. §405 et. seq.
- e. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the Industrial Pretreatment Program. The permittee must provide EPA, in writing, within 180 days of the effective date of this permit, proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; (3) sludge control evaluations. The

permittee will implement these proposed changes pending EPA's approval under 40 C.F.R. §403.18.

F. SLUDGE CONDITIONS

1. The permittee shall comply with all existing Federal and State laws and regulations that apply to sewage sludge use and disposal practices and with the Clean Water Act (CWA) Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either State (Env-Wq 800) or Federal (40 C.F.R. Part 503) requirements.
3. The technical standards (Part 503 regulations) apply to facilities which perform one or more of the following uses or disposal practices.
 - a. Land Application – The use of sewage sludge to condition or fertilize the soil.
 - b. Surface Disposal – The placement of sewage sludge in a sludge only landfill.
 - c. Fired in a sewage sludge incinerator.
4. The 40 C.F.R. Part 503 conditions do not apply to facilities that place sludge within a municipal solid waste landfill (MSWLF). Part 503 relies on 40 C.F.R. Part 258 criteria, which regulates landfill disposal, for sewage sludge disposed of in a MSWLF. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit, but rather treat the sludge (lagoon reed beds), or are otherwise excluded under 40 C.F.R. Part 503.6.
5. The permittee shall use and comply with the attached Sludge Compliance Guidance document to determine appropriate conditions. Appropriate conditions contain the following items:
 - a. General Requirements
 - b. Pollutant Limitations
 - c. Operational Standards (pathogen reduction and vector attraction reductions requirements)
 - d. Management Practices
 - e. Record Keeping
 - f. Monitoring
 - g. Reporting

Depending on the quality of material produced by a facility all conditions may not apply to the facility.

6. If the sludge disposal method requires monitoring, the permittee shall monitor the pollutant concentrations, pathogen reduction, and vector attraction reduction at one of the following frequencies. The frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

- a. Less than 290.....1/Year
 - b. 290 to less than 1,500.....1/Quarter
 - c. 1,500 to less than 15,000.....6/Year
 - d. 15,000 plus.....1/Month
7. The permittee shall perform all required sewage sludge sampling using the procedures detailed in 40 C.F.R. Part 503(h).
8. When the permittee is responsible for an annual report containing the information specified in the regulations, the report shall be submitted by February 19th of each year. Reports shall be submitted to the address contained in the reporting section of the permit.
9. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge use or disposal or when the sludge is disposed of in a MSWLF. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such cases, the permittee is required only to submit an annual report by February 19th of each year containing the following information:
 - a. Name and address of the contractor responsible for sludge use and disposal.
 - b. Quantity of sludge in dry metric tons removed from the facility.

Reports shall be submitted to the address contained in the reporting section of the permit.

G. MONITORING AND REPORTING

Monitoring results shall be summarized for each calendar month and reported on separate Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period.

Signed and dated original DMRs and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
 Water Technical Unit (SEW)
 P.O. Box 8127
 Boston, Massachusetts 02114-8127

Duplicate signed copies (original signature) of all written reports or notifications required herein or in Part II shall be submitted to the State at:

New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

All verbal reports or notifications shall be made to both EPA and NHDES.

H. STATE PERMIT CONDITIONS

1. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES Discharge Permit is issued by EPA under Federal and State law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.
3. EPA shall have the right to enforce the terms and conditions of this Permit pursuant to federal law and NHDES-WD shall have the right to enforce the Permit pursuant to state law, if the Permit is adopted. Any modification, suspension, or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency.
4. Pursuant to New Hampshire Statute RSA 485-A:13,I(c), any person responsible for a bypass or upset at a wastewater treatment facility shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is a tributary. The permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.
5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water or (2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 – 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR 133.102(c).

On August 21, 2007, the Town of Merrimack submitted a pH study to the NHDES-WD to support raising the upper boundary of the pH limit to 9.0 S.U. On September 12, 2007, EPA received a letter from NHDES-WD stating that an upper pH limit of 9.0 S.U. would not have a deleterious impact to the Merrimack River. Therefore, the pH range for this permit is 6.5 to 9.0 S.U.

6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):
 - (a) Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:
 - (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;
 - (2) Any wastewater connection or other discharge in excess of 5,000 gpd;
 - (3) Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity based on actual average flow for 3 consecutive months;
 - (4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity; and
 - (5) Any sewage pumping station greater than 50 gpm or serving more than one building.
7. For each new or increased discharge of industrial waste to the POTW, the permittee shall submit, in accordance with Env-Ws 904.14(e) an "Industrial Wastewater Discharge Request Application" approved by the permittee in accordance with 904.13(a). The "Industrial Wastewater Discharge Request Application" shall be prepared in accordance with Env-Ws 904.10.
8. Pursuant to Env-Ws 904.17, at a frequency no less than every five years, permittees are required to submit:
 - a. A copy of its current sewer use ordinance. The sewer use ordinance shall include local limits pursuant to Env-Ws 904.04 (a).
 - b. A current list of all significant indirect discharges to the POTW. At a minimum, the list shall include for each industry, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.
 - c. A list of all permitted indirect dischargers; and
 - d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.

9. In addition to submitting DMRs, monitoring results shall also be summarized for each calendar month and reported on separate Monthly Operating Report Form(s) (MORs) postmarked no later than the 15th day of the month following the completed reporting period.

Signed and dated MORs shall be submitted to:

New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095